LISTING OF CLAIMS

This listing of claims replaces all prior versions and listings of claims in the patent application.

Claim 1.   (currently amended) An image processing apparatus for synthesizing a hair image with a three-dimensional shape image of a head part, to generate a hair-style-matched image, comprising:

a storage part for storing a hair-style data piece constructed by a plurality of hair data pieces arranged on a two-dimensional array, wherein the storage part stores the hair-style data piece constructed with a plurality of data pieces arranged on a two-dimensional array corresponding to a projected image obtained by projecting a three-dimensional hair style expressed by a columnar coordinate system on a two-dimensional coordinate system;

a read out part for reading out the hair-style data piece stored in the storage part;

a mapping part for mapping the hair data piece corresponding to a hair contained in the hair-style data piece read out by the read out part, at a predetermined position on the three-dimensional shape image of the head part; and

a generation part for generating the hair-style-matched image, based on a mapping result obtained by the mapping part.

Claim 2.   (original) The image processing apparatus according to claim 1, wherein the hair data piece is three-dimensional curve data which is constructed by a plurality of control points.

Claim 3.   (original) The image processing apparatus according to claim 1, wherein the hair data piece is polygon data which is constructed by a plurality of polygons.

Claim 4.   (canceled)

Claim 5.   (canceled)

Claim 6.   (Previously presented) The image processing apparatus according to claim 1, wherein an interpolation part interpolates the hair data piece at the predetermined position with use of a hair data piece close to the predetermined position.

Claim 7.   (Previously presented) The image processing apparatus according to claim 6, wherein the interpolation part interpolates the hair data piece based on group information contained in the hair data piece close to the predetermined position.

Claim 8.   (Previously presented) The image processing apparatus according to claim 1, wherein the mapping part includes a coordinate conversion part for converting the hair data piece expressed by a first coordinate system into data of a second coordinate system by which the three-dimensional shape image of the head part is expressed.

Claim 9.   (Previously presented) The image processing apparatus according to claim 8, wherein the coordinate conversion part converts the hair data piece expressed by the first coordinate system into data of a local coordinate system having an origin on a surface of the head part, and thereafter converts the data into data of the second coordinate system by which the three-dimensional shape image of the head part is expressed.

Claim 10.   (Previously presented) The image processing apparatus according to claim 8, wherein when the hair data piece expressed by the first coordinate system is converted into the data of the second coordinate system by which the three-dimensional shape image of the head part is expressed, the coordinate conversion part executes at least one of a coordinate axis rotation and origin shift, based on a random number.

Claim 11.   (currently amended) An image processing method for synthesizing a hair image with a three-dimensional shape image of a head part, to generate a hair-style-matched image, the method comprising the steps of:

storing a hair-style data piece constructed by a plurality of hair data pieces arranged on a two-dimensional array;

reading out the hair-style data piece;

mapping the hair data piece corresponding to a hair contained in the read out hair-style data piece at a predetermined position on the three-dimensional shape image of the head part; and

generating the hair-style-matched image based on the mapping result, wherein during the step of storing, the hair-style data piece is constructed by a plurality of hair data pieces arranged on a two-dimensional array corresponding to a projected image obtained by projecting a three-dimensional hair style expressed by a columnar coordinate system, on a two-dimensional coordinate system.

Claim 12. (original) The image processing method according to claim 11, wherein the hair data piece is three-dimensional curve data which is constructed by a plurality of control points.

Claim 13. (original) The image processing method according to claim 11, wherein the hair data piece is polygon data which is constructed by a plurality of polygons.

Claim 14. (canceled)

Claim 15. (canceled)

Claim 16. (Previously presented) The image processing method according to claim 11, further comprising the step of interpolating the hair data piece at the predetermined position with use of a hair data piece close to the predetermined position.

Claim 17. (Previously presented) The image processing method according to claim 16, wherein during the step of interpolating, the hair data piece is interpolated based on group information contained in the hair data piece close to the predetermined position.

Claim 18. (Previously presented) The image processing method according to claim 11, wherein the step of mapping includes a coordinate conversion step of converting the hair data piece expressed by a first coordinate system into data of a second coordinate system by which the three-dimensional shape image of the head part is expressed.

Claim 19.   (Previously presented) The image processing method according to claim 18, wherein the coordinate conversion step includes converting the hair data piece expressed by the first coordinate system into data of a local coordinate system having an origin on a surface of the head part, and thereafter, converting the data into data of the second coordinate system by which the three-dimensional shape image of the head part is expressed.

Claim 20.   (Previously presented) The image processing method according to claim 18, wherein the step of converting the hair data piece expressed by the first coordinate system into the data of the second coordinate system by which the three-dimensional shape image of the head part is expressed includes executing at least one of coordinate axis rotation and origin shift based on a random number, in processing in the coordinate conversion step.

Claim 21.   (currently amended) A recording medium which records a computer-readable program for image processing of synthesizing a hair image with a three-dimensional shape image of a head part, to generate a hair-style-matched image, the program comprising:

a storage part for of storing a hair-style data piece constructed by a plurality of hair data pieces arranged on a two-dimensional array;

a read out part for of reading out the hair-style data piece stored by processing in the storage part;

a mapping part for of mapping the hair data piece corresponding to a hair contained in the hair-style data piece read out by the read out part, at a predetermined position on the three-dimensional shape image of the head part; and

a generation part for of generating the hair-style-matched image, based on a mapping result obtained by the mapping part, wherein, during processing in the storage part, the hair-style data piece constructed with a plurality of data pieces arranged on a two-dimensional array corresponding to a projected image obtained by projecting a three-dimensional hair style expressed by a columnar coordinate system, on a two-dimensional coordinate system.

Claim 22.   (original) The recording medium according to claim 21, wherein the hair data piece is three-dimensional curve data which is constructed by a plurality of control points.

Claim 23.   (original) The recording medium according to claim 21, wherein the hair data piece is polygon data which is constructed by a plurality of polygons.

Claim 24.   (canceled)

Claim 25.   (canceled)

Claim 26.   (Previously presented) The recording medium according to claim 21, wherein the program further comprises an interpolation part for of interpolating the hair data piece at the predetermined position with use of a hair data piece close to the predetermined position.

Claim 27.   (Previously presented) The recording medium according to claim 26, wherein, during processing in the interpolation part, the hair data piece is interpolated based on group information contained in the hair data piece close to the predetermined position.

Claim 28.   (Previously presented) The recording medium according to claim 21, wherein, processing in the mapping part includes a coordinate conversion step of converting the hair data piece expressed by a first coordinate system into data of a second coordinate system by which the three-dimensional shape image of the head part is expressed.

Claim 29.   (Previously presented) The recording medium according to claim 28, wherein, during processing in the coordinate conversion part, the hair data piece expressed by the first coordinate system is converted into data of a local coordinate system having an origin on a surface of the head part, and thereafter, the data is converted into data of the second coordinate system by which the three-dimensional shape image of the head part is expressed.

Claim 30.   (Previously presented) The recording medium according to claim 28, wherein, when the hair data piece expressed by the first coordinate system is converted into the data of the second coordinate system by which the three-dimensional shape image of the head part is expressed, at least one of coordinate axis rotation and origin shift is executed, based on a

random number, during processing in the coordinate conversion part.